REMARKS/ARGUMENTS

Claims 16 and 19 are active in this application.

Claim 16 is amended to define that the ethoxylates "have a degree of ethoxylation of from 2 to 6" and that the mixture is "alkanol-free." Support for this amendment is found on page 6, lines 22 to 24 and page 7, lines 12 to 14.

Claims 16 and 19 are newly rejected under three separate headings under 35 USc 102(b) or 35 USC 103(a) in view of Zwack, Pedersen, and Short.

Zwack does not describe ethoxylates with "a degree of ethoxylation of from 2 to 6."

Pederson and Short do not describe an alkanol-free mixture of ethoxylates of C_{4-6}-alkylglycols -or diglycols which, on average, have a degree of ethoxylation of from 2 to 6.

Zwack describes a method for cleaning membrane filter. Zwack at column 3, line 64 to column 4, line 1 describes water-soluble organic solvents which are used may be monoalkylethers of ethylene glycols in which the alkyl group contains from about 1 to 6 atoms. In addition, acetylenic polyols are described in column 4, lines 30 to 36.

Monoalkyl ethers of ethylene glycols in which the alkyl group contains from about 1 to 6 atoms according to Zwack correspond to a degree of ethoxylation of 1. Contrast this to Claim 16 which states a degree of ethoxylation of from 2 to 6, which corresponds to at least a degree of ethoxylation of three, because for example if a glycol is ethoxylated with two units of ethylene oxide, an overall degree of ethoxylation of three is obtained. Therefore, the claimed mixture is not described by Zwack.

Petersen describes compositions and a process for cleaning and finishing hard surfaces and the cleaning composition can include ethylene glycol mono- and dialkyl ethers (column 6, line 33 to column 7, line 2). In addition, Pedersen teaches including solvents

according to the formula in column 7, lines 2 to 20 and acetylene diols like the examples which in column 6, lines 7 to 12.

The ethoxylates in Pedersen are based on alcohols R_5-OH, which are ethoxylated with 2 to 5 equivalents of ethylene oxide or propylene oxide. (see text bridging cols. 6-7: "The compositions of the invention also contain an aqueous soluble or miscible solvent material").

Pederson does not describe an alkanol-free mixture of ethoxylates of C_{4-6}-alkylglycols -or diglycols which, on average, have a degree of ethoxylation of from 2 to 6 as set forth in Claim 16.

Short describes an aqueous cleaner composition comprising acetylenic alcohol or diol (column 2, component B, lines 4 to 18) combined with polyoxyethylene oxide ether of an alkylphenyl or alkanol in which the alkyl radical has from 6 to 16 carbon atoms, and the number of ethylene oxide repeating units is from 4 to 10 (column 2, lines 19 to 22). The polyoxyethylene oxide ether of alkanols in an ethoxylation reaction with the respective alkanols. (see, for example col. 2).

Short does not describe an alkanol-free mixture of ethoxylates of C_{4-6}-alkylglycols - or diglycols which, on average, have a degree of ethoxylation of from 2 to 6 as set forth in Claim 16.

The claims are also not obvious in view of Pederson, Short or Zwack.

As already explained above, Pedersen and Short teach ethoxylation with alkanols but an ethoxylate according to the present application which is obtained by ethoxylation reaction of a glycol or diglycol. As discussed to page 6, last paragraph of the present application, the preparation of these glycols or diglycols starts from alcohol-free, pure alkyl glycols and alkyl glycols, and not as is more common from alkanols by alkoxylation. Therefore, as set forth in

claim 16, the mixture does therefore not include any residual alkanol (which is found in Pederson and Short) and, perhaps at most alkylglycols. A distribution of the alkoxylation degree that is specific for alkylglycols is what is obtained as has been explained in detail in previous replies.

As discussed on page 7 of the present application, alkoxylates are oligomeric or polymeric reaction products with alkoxides. Because of the kinetics of polymerizations, a random distribution of homologues results with the average value typically used in nomenclature. In contrast to this random distribution as is normally the case, the alkoxylates based on glycols or diglycols as set forth in claim 16 have the homologue distribution important for the aggregation behavior and other properties according to the invention, without containing any alcohol.

Support for this point is found in the table on page 7 of the description. In the second column, a typical ethoxylate based on n-hexanol is shown, wherein the area % of the different homologues are presented. n-hexanol comprising two, three, four, five and six units of ethylene oxide are present in about the same amounts. The third column shows the ethoxylate within the claims and based on n-hexylglycol and two units of ethylene oxide. Up to 70% of all homologues are homologues comprising two, three and four units of ethylene oxide. In addition, no n-hexanol is present in this mixture.

As discussed on page 11, second paragraph in the present application it is not necessary and not desired for a residual content of alcohol to be present in the mixtures or formulations. Indeed, the inventors have found that surfactant formulations with high interface dynamics can be formulated using the alkylglycol ethoxylates a without a residual content of alcohol which is usually present in lower alcohol alkoxylates in the product that results from their preparation as taught by Pedersen and Short. Needless to say, it should be recognized that one would not have modified Pederson and Short to achieve that which is

claimed because the relevant teachings in Pederson and Short teach away from what is claimed and one simply would not have modified these disclosures to achieve what is defined in the pending claims.

The alkanol-free ethoxylates having specific homologue distribution which are obtained by an ethoxylation reaction of glycols or diglycols, cannot be found from any of the cited Zwack, Pedersen and Short nor are there sufficient disclosures that would have modified any of these citations to achieve what is defined in the claims. Indeed, as already explained above, the cited art describes the presence of alkanols in their compositions and would not lead one to modify those teachings to alkanol free mixtures as set forth in claim 16 which show the advantageous behavior as set forth in the examples of the present application discussed at length previously.

Specifically, the advantages obtained from this specific mixture are shown in example 2 on pages 13 and 14 of the description of the present application. Example 2 shows that the specific mixture of Claim 16 makes it possible to achieve an interfacial tension of 43 mN/m in only 0.2 seconds (formulation B) whereas comparative formulation (A) with the same composition but for cumene sulphonate used in place of hexyl glycol ethoxylate with a degree of ethoxylation of 4. Formulation A in equilibrium yielded an interfacial tension of 50 mN/m after 0.5 seconds.

This Example shows that formulation B (as in the claims) has advantages over formulation A in its static and dynamic properties.

The paper finishing example on pages 14-15 shows that the inventive alkylglycol alkoxylates significantly improve the uniformity of an image that is printed on a treated paper (as outlined in the table on page 15).

Reconsideration and withdrawal of all of the rejections is requested.

A Notice of Allowance is requested for all pending claims. Should the Examiner deem that any further action is required to place this application in even better form for allowance, he is invited to contact the Applicants' undersigned representative.

Respectfully submitted,

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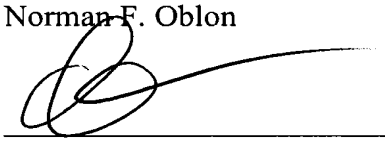

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